F59 Commercial Chassis Specifications

2019 F59 Stripped Chassis Specifications

Dimensions

F59 Commercial Chassis Specifications

Wheelbase (in.)		158	178	208
GVWR (lbs.)		16,000	16,000	19,500
Code	Description (in.)			
A	Front Overhang	37.4	37.4	37.4
B	Rear Overhang	105.8	105.8	105.8
C	Overall Length	301.2	321.2	351.2
D	Front Frame Width	41.4	41.4	41.4
E	Rear Frame Width	34.0	34.0	34.0
F	Tire Outside Width (Front)	90.5	90.5	90.5
G	Tire Outside Width (Rear Inner)	73.1	73.1	73.1
H	Tire Center Width (Rear)	74.0	74.0	73.3
I	Tire Outside Width (Rear Outer)	94.0	90.4	94.0
J	Frame Front Section Height	7.5	7.5	7.5
K	Frame Height @ Front Wheel[1]	31.5	31.5	31.0
L	Frame Rear Section Height	9.2	9.2	9.2
M	Frame Height @ Rear Axle[1]	32.7	32.7	32.9

NOTE: Dimensions @ GVWR.

Wheelbase (in.)		158/168[2]	178/190	178[2]	208/208[2]
GVWR (lbs.)		19,500	19,500	22,000	22,000
Code	Description (in.)				

A	Front Overhang	37.4	37.4	37.4	37.4
B	Rear Overhang	105.8	105.8	105.8	105.8
C	Overall Length	301.2/311.2	321.2/333.1	321.2	351.2
D	Front Frame Width	41.4	41.4	41.4	41.4
E	Rear Frame Width	34.0	34.0	34.0	34.0
F	Tire Outside Width (Front)	90.5/91.6	90.5	91.6	91.6
G	Tire Outside Width (Rear Inner)	73.1/67.8	73.1	67.8	72.8/67.8
H	Tire Center Width (Rear)	74.0	74.0	74.0	73.3
I	Tire Outside Width (Rear Outer)	94.0/90.4	94.0	90.4	94.0/90.4
J	Frame Front Section Height	7.5	7.5	7.5	7.5
K	Frame Height @ Front Wheel(1)	31.0	31.0	31.3	31.3
L	Frame Rear Section Height	9.2	9.2	9.2	9.2
M	Frame Height @ Rear Axle(1)	32.9	32.9	33.4	33.4

(1) Dimensions are for reference only. Actual heights may vary due to product tolerances.

(2) Parcel Delivery Van Package only.

NOTE: Dimensions @ Stripped Chassis.

Weight Ratings

F59 Commercial Chassis Specifications

F59 Commercial Stripped Chassis – GVWR/Payload/GCWR & Trailer Weight/GAWR/Base Curb Weight

Drive/WB (in.)	Engine/ Transmission	Maximum GVWR (lbs.)	Maximum Payload[1] (lbs.)	Maximum GCWR/ Trailer Weight (lbs.)	GAWR[2] (lbs)		Base Curb Weight[3] (lbs.)		
					Front	Rear	Front	Rear	Total
4x2 — 158	6.8L/Auto	16,000	10,080	23,000/7000	6500	11,000	3054	2857	5911
	6.8L/Auto	19,500	13,480	26,000/6500	7000	13,500	3197	2821	6018
4x2 — 168[4]	6.8L/Auto	19,500	13,470	27,200/7700	7000	13,500	3198	2828	6026
4x2 — 178	6.8L/Auto	16,000	10,050	23,000/7000	6500	11,000	3191	2754	5945
	6.8L/Auto	19,500	13,460	26,000/6500	7000	13,500	3198	2835	6033
	6.8L/Auto	22,000[4]	15,750	29,700/7700	8000	15,000	3182	3068	6250
4x2 — 190	6.8L/Auto	19,500	13,400	26,000/6500	7000	13,500	3209	2887	6096
4x2 — 208	6.8L/Auto	19,500	13,310	26,000/6500	7000	13,500	3227	2962	6189
	6.8L/Auto	22,000	15,610	26,000/4000	8000	15,000	3276	3112	6388

(1) Load rating represents maximum allowable weight of people, cargo and body equipment and is reduced by optional equipment weight.

(2) Gross axle weight rating is determined by the rated capacity of the minimum component of the axle system (axle, springs, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVW rating or GAWR (front or rear).

(3) Base curb weights shown above consider the strip chassis weight with standard equipment, full fuel tank and all other fluids filled to capacity. Available equipment weights are in pounds as follows: (Front/Total): Pull Out Ramp Prep Package (available with 208" wheelbase only) (50/85)

(4) Parcel Delivery Van Package only.

Standard Powertrain/Chassis Equipment Specifications

F59 Commercial Chassis Specifications

Drive:		4x2
POWERTRAIN:		
Engine	Application	50 States
	Type	6.8L SEFI 3V V10
Transmission	Type	TorqShift 6-speed automatic with tow/haul mode
	Speeds	6-speed overdrive
AXLES:		
Front Axle	Type	Forged steel I-beam
	Capacity (Rating @ Ground)	6500 lbs. (16,000 lb GVWR) 7000 lbs. (19,500 lb. GVWR) 8000 lbs. (22,000 lb. GVWR)
	Kingpin Angle	5.5°
	Caster Angle	4.6°
Rear Axle	Type — Full-floating	Full-floating
	Capacity (Rating @ Ground)	11,000 lbs. (16,000-lb. GVWR), 13,500 lbs. (19,500-lb. GVWR) and 15,000 lbs. (22,000-lb. GVWR)
	Axle Ratio	4.30 (16,000-lb. GVWR), 4.88 (19,500-lb. GVWR), 5.38 (22,000-lb. GVWR)
BRAKES:		
Front/Rear Disc	Type	Dual Piston Pin Slider Calipers, Bolt-on Adaptors, Wraparound Tie Bars
	Rotor Diameter—Front/Rear	15.55"
Power Assist Unit	Type	Hydro-Boost (16,000-lb. and 19,500-lb. GVWR); Hydro Max (22,000-lb. GVWR)

Anti-lock System		4-wheel, 3-sensors/3-channel (16,000-lb. and 19,500-lb. GVWR); 4-wheel, 4-sensors/4-channel (22,000-lb. GVWR)
Parking Brake (Driveline Drum)		Trans-mounted, Foot-operated, Hand Release
ELECTRICAL:		
Alternator	Rating	175 Amperes, 2360 Watt
Battery	Type	Maintenance-free
	Rating	78 Amp-hr., 750 CCA
EXHAUST SYSTEM:	Type	L.H. Forward-of-Rear-Axle Exhaust Exit
FUEL TANK:	Location/Capacity	Aft-of-Rear-Axle (Left-hand Side Fuel Fill)/40.9-gallon
STEERING:	Type	Power, TRW, TAS 40 Gear (Includes Cooler)
	Ratio	18.4:1
	Wheel	17.5" diameter
SUSPENSION:		
Frame	Type	Ladder-type, Single-channel, 36,000 psi Steel
	Section Modulus	9.46 cu. in.
Jounce Bumpers		Front, Variable Rate
Springs, Front	Type	Parabolic Leaf Spring, Single-stage, Constant Rate
	Rating @ Ground (min.)	Refer to page 103 for Usage and Ratings
Springs, Rear	Type	Parabolic Leaf Spring, Single-stage, Constant Rate
	Rating @ Ground (min.)	Refer to page 103 for Usage and Ratings
Shock Absorbers	Type/Size (Dia.)	Gas-pressurized (Front/Rear)/2.20" Sachs Twin-Tube
Stabilizer Bars		38.1 mm Front/35.7 mm Rear
TIRES:	Type	Steel-belted Radial, Highway, BSW
	Size	Six, 225/70R19.5G (16,000-lb./19,500-lb. GVWR); six 245/70R19.5G (22,000-lb. GVWR)

WHEELS:	Type and Size	Six, 10-hole Disc, 19.5" x 6.0" (16,000-lb. and 19,500-lb. GVWR); Six, 10-hole Disc, 19.5" x 6.75" (22,000-lb. GVWR)

Front Axle Specifications

Type		Forged I-beam
GVWR (lbs.)		16,000/19,500/22,000
Max. Rating @ Ground (lbs.)		6500/7000/8000
Axle	Type	Monobeam
	Material	Forged Steel
	Spring Centers (in.)	41.87
Ball Joint		Zirked
Spindle	Material	Nodular Cast-iron Body with Forged Steel Stem
Wheel Bearings	Type	Tapered Roller

Rear Axle Specifications

GVWR (lbs.)		16,000	19,500	22,000
Make (Standard)		Dana 80	Dana S110	Dana S130
Max. Rating @ Ground (lbs.)		11,000	13,500	15,000
Type		Full-floating		
Driveline Attachment		1480		
Housing	Type	Cast Center	Banjo, Cast Carrier	Banjo, Cast Carrier
	Cover Attachment	Bolted	Welded	Welded
Section	Tube Dia. (in.)	4.00	4.33 x 4.26	4.33 x 4.26
Synthetic Lubricant Capacity (pts.)		8.875	13.6	13.6
Spring Centers (in.)		42.48	42.48	42.48
Wheel Bearings	Type	Tapered Roller		
Gears	Type	Hypoid		
	Material	Alloy Steel		
Ring Gear	Pitch Dia. (in.)	11.26	12.2	12.2
Pinion	Mounting	Overhung		
Differential	Type	2-pinion	2-pinion	4-pinion
Axle Shaft	Spline Minor Dia. (in.)	1.50	1.56	1.61
	Spline Major Dia. (in.)	1.57	1.75	1.85
	No. of Splines (Hub End)	37	34	36

Hydraulic Brake Equipment Specifications — Front/Rear Disc

Type	Axle Usage (lbs.)	Rotor Diameter (in.)		Brake Lining Segment	Area (sq. in.)/ Width (in.)/ Thickness (in.)	Caliper Piston No. Dia. (in.)	Gross Lining Area per Axle (sq. in.)	Total Swept Area per Axle (sq. in.)
		OD	ID					
Front Disc	6500	15.55	10.62	Outboard	13.9/1.81/0.47	Dual/2.36	55.6	361.9
				Inboard	13.9/1.81/0.47			
	7000	15.55	10.62	Outboard	13.9/1.81/0.47	Dual/2.36	55.6	361.9
				Inboard	13.9/1.81/0.47			
	8000	15.55	10.62	Outboard	13.9/1.81/0.47	Dual/2.36	55.6	361.9
				Inboard	13.9/1.81/0.47			
Rear Disc	11,000/13,500/ 15,000	15.55	10.62	Outboard	13.9/1.81/0.47	Dual/2.36	55.6	361.9
				Inboard	13.9/1.81/0.47			

Brake Master Cylinder Specifications

Type	Usage (lbs.)	Bore Dia. (in.)
Dual System, Dash-mounted	16,000	1.375
	19,500, 22,000 GVWR	2.0

Brake Booster Specifications

F59 Commercial Chassis Specifications > Brakes

Make/Type	Usage (lbs.)	Booster Type	Boost Ratio
Dash-mounted	16,000	Hydro Boost	8.19
	19,500, 22,000 GVWR	Hydro Max	21.1

Cooling System Specifications

F59 Commercial Chassis Specifications > Cooling Systems

Engine	Cooling	Trans. Usage	Radiator								Fan Specifications		
			Frontal Area (sq. in.)	Core Size (in.)			Rows of Tubes	Fins Per Inch	Cooling System Capacity qts. (liters)	In-Tank Trans Cooler	Type	No. of Blades	Blade Dia. (in.)
				Height	Width	Thick.							
6.8L (415) SEFI 3V V10	Std	All	857	28.4	30.19	1.42	1	17.8	27.5 (26)	Std	Plastic	8	20.0

Auxiliary Automatic Transmission Oil Cooler Applications

F59 Commercial Chassis Specifications > Cooling Systems

Engine	Transmission	Cooler — No. of Plates
6.8L (415) SEFI 3V V10	5-speed Automatic Overdrive	33

Engine

F59 Commercial Chassis Specifications

Driveline Layout	Front engine, rear wheel (RWD)
Engine Type	6.8L SEFI 3V V10
Displacement (liters/cu. in.)	6.8/415
Horsepower @ rpm	320 @ 3900
Torque (lb.-ft.) @ rpm	460 @ 3000
Compression Ratio	9.2:1
Valvetrain	SOHC
Valve Operation	Roller rocker shaft
Bore & Stroke (in.)	3.55 x 4.17
Main bearings	6
Induction	Naturally aspirated
Fuel System	Sequential Electronic Fuel Injection
Fuel Requirement (octane)	87 (min.)

Fuel System Data

F59 Commercial Chassis Specifications

Electronic Fuel Injection	Sequential Multiport Fuel Injection
Fuel Pump	Single Electric-in-tank High Pressure
Fuel Filter	In-tank Large Capacity (One)
Air Cleaner	Dry Element, Replaceable

Steering Specifications

F59 Commercial Chassis Specifications

Wheelbase (in.)	Power Steering[1]	Turning Diameter (ft.)
	Gear Ratio	Curb-to-Curb
158	18.4:1	45.4
178	18.4:1	49.7
190	18.4:1	52.2
208	18.4:1	56.1

(1) Power Steering Fluid Cooler is standard.

Frame Specifications

F59 Commercial Chassis Specifications > Suspensions

Wheelbase (in.)	No. of Crossmembers	Maximum Side Rail Section[1] (Height x Width x Thickness) (in.)	Section Modulus (cu. in.)	Yield Strength (psi)
158	8	9.16x3.00x0.25	9.46	36,000
178	8	9.16x3.00x0.25	9.46	36,000
190	8	9.16x3.00x0.25	9.46	36,000
208	9	9.16x3.00x0.25	9.46	36,000

(1) Measured to inside of metal.

Shock Absorber Specifications

Type	Usage	Front			Rear		
		No. Used	Piston Dia. (in.)	Type	No. Used	Piston Dia. (in.)	Type
Sachs Twin-Tube	Std.	2	2.20	Gas-pressurized	2	2.20	Gas-pressurized

Spring Specifications — Front Leaf

Combined Rating @ Ground (lbs.)	Number of Leaves	Total Thickness (in.)	Length (in.)	Width (in.)	Deflection Rate(1) (lbs. per in./spring)
6500	2	2.73	63.0	4.0	510
7000	2	2.73	63.0	4.0	585
8000	2	2.73	63.0	4.0	585

(1) Single-stage, constant rate springs.

Spring Specifications — Rear Leaf

Combined Rating @ Ground (lbs.)	Number of Leaves	Total Thickness (in.)	Overall Length (in.)	Width (in.)	Deflection Rate(1) (lbs. per in./spring)
11,000	2	3.82	64.0	4.0	1425
13,500	3	3.08	64.0	4.0	2150
15,000	3	3.08	64.0	4.0	2150

(1) Single-stage constant rate springs.

Tire Specifications

Size	Tread Type & Sidewall	Tire Manufacturer	Rim Width (in.)	Section Width(1) (in.)	Ply/Load Rating	Inflation Press. (psi)	Load Limits @ Max. Inflation Press. (lbs.)	Static Loaded Radius (in.)	SAE Revolutions per Mile @ 45 mph
225/70Rx19.5	Highway-BSW	Continental	6.0	8.22	14/G	85–100(2)	3640/3490	14.96	647
245/70Rx19.5	Highway-BSW	Goodyear	6.75	9.94	12/G	95(2)	3890/3655	15.30	633

(1) Tire and rim maximum width.

(2) 16,000 GWR = 85 psi, 19,500 GVWR = 95 psi (front) and 100 psi (rear).

Wheel Specifications

Wheel Type	Wheel Size	Nominal Offset (in.)	No. of Studs	Bolt Circle mm (in.)	Max. Wheel Capacity Load (lbs. @ ground)
Steel	19.5" x 6.0" RW	5.35	10	225 (8.85)	3750
Steel	19.5" x 6.75" RW	5.50	10	225 (8.85)	4000

Automatic Transmission Specifications

F59 Commercial Chassis Specifications

Make/Type	6-Speed TorqShift Double Overdrive Automatic with Tow/Haul Mode
Ratios (to 1):	
1st	3.97
2nd	2.31
3rd	1.51
4th	1.14
5th	0.85
6th	0.67
Reverse	3.12
Converter Torque Ratio @ WOT Stall	1.86
Fluid Capacity (qts.)	19.0
Gear Set	Spur
Oil Cooler	Oil to Air and In-tank
Oil Filter	Internal
Converter Size & Type	12" PCM Controlled Clutch Apply

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